

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference CIS0200WO	FOR FURTHER ACTION see Form PCT/ISA/220 as well as, where applicable, item 5 below.	
International application No. PCT/US2004/034851	International filing date (day/month/year) 21/10/2004	(Earliest) Priority Date (day/month/year) 21/10/2003
Applicant CISCO TECHNOLOGY, INC.		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 4 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

- a. With regard to the language, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ The international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

- b. ☐ With regard to any nucleotide and/or amino acid sequence disclosed in the international application, see Box No. I.

2. ☐ Certain claims were found unsearchable (See Box II).

3. ☐ Unity of invention is lacking (see Box III).

4. With regard to the title,

☐ the text is approved as submitted by the applicant.

☒ the text has been established by this Authority to read as follows:

PORT-BASED LOADSHARING FOR AN ACCESS-LAYER SWITCH

5. With regard to the abstract,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the drawings,

- a. the figure of the drawings to be published with the abstract is Figure No. 3a

☒ as suggested by the applicant.

☐ as selected by this Authority, because the applicant failed to suggest a figure.

☐ as selected by this Authority, because this figure better characterizes the invention.

- b. ☐ none of the figures is to be published with the abstract.

INTERNATIONAL SEARCH REPORT

International Application No
PCT/US2004/034851A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 H04L12/56 H04L12/46

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 H04L

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6 181 699 B1 (CRINION PATRICK T ET AL) 30 January 2001 (2001-01-30) abstract column 8, line 54 - column 9, line 20 column 9, line 39 - column 10, line 7 column 11, line 60 - column 12, line 2 column 12, line 17 - line 25 column 12, line 51 - line 57 column 13, line 40 - line 45 figures 1,8 ----- -/--	1-56

☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

* Special categories of cited documents :

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- *&* document member of the same patent family

Date of the actual completion of the international search

9 March 2005

Date of mailing of the international search report

18/03/2005

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Ramenzoni, S

INTERNATIONAL SEARCH REPORT

International Application No
PCT/US2004/034851

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 6 236 659 B1 (PASCOE DAVID JOHN) 22 May 2001 (2001-05-22) abstract column 1, line 39 - line 47 column 2, line 7 - line 37 column 3, line 21 - column 4, line 15 column 6, line 44 - line 45 column 8, line 5 - line 11 -----	1-56
X	US 6 243 360 B1 (BASILICO ALBERT RICHARD) 5 June 2001 (2001-06-05) column 3, line 28 - line 58 column 4, line 6 - line 8 column 4, line 18 - line 35 column 4, line 59 - column 5, line 7 -----	1-4, 7, 9-15, 22-25, 28-31, 33-36, 38, 39, 41-46, 48-50
X	US 6 064 671 A (KILLIAN ET AL) 16 May 2000 (2000-05-16) column 10, line 1 - line 8 column 18, line 31 - line 41 claim 16 -----	1, 22, 34, 42, 48
X	D.T. STOTT: "Layer-2 Path Discovery Using Spanning Tree MIBs" AVAYA LABS RESEARCH, AVAYA INC., 7 March 2002 (2002-03-07), pages 1-23, XP002320534 page 2, line 6 - line 14 page 5, line 11 - page 6, line 9 page 7, line 20 - line 23 page 8, line 1 - line 5 page 13, line 2 - line 18 -----	1, 22, 34, 42, 48
A	US 5 959 989 A (GLEESON ET AL) 28 September 1999 (1999-09-28) column 1, line 56 - column 2, line 9 column 9, line 36 - line 45 column 13, line 31 - line 38 column 16, line 55 - column 17, line 11 -----	1-56

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No
PCT/US2004/034851

Patent document cited in search report		Publication date		Patent family member(s)	Publication date
US 6181699	B1	30-01-2001	DE	19929517 A1	05-01-2000
			KR	2000011368 A	25-02-2000
US 6236659	B1	22-05-2001	GB	2320169 A , B	10-06-1998
US 6243360	B1	05-06-2001	US	5864535 A	26-01-1999
US 6064671	A	16-05-2000	NONE		
US 5959989	A	28-09-1999	NONE		

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

To:

see form PCT/ISA/220

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/US2004/034851

International filing date (day/month/year)
21.10.2004

Priority date (day/month/year)
21.10.2003

International Patent Classification (IPC) or both national classification and IPC
H04L1256, H04L1246

Applicant
CISCO TECHNOLOGY, INC.

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☒ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA:



European Patent Office
D-80298 Munich
Tel. +49 89 2399 - 0 Tx: 523656 epmu d
Fax: +49 89 2399 - 4465

Authorized Officer

Ramenzoni, S

Telephone No. +49 89 2399-7146



**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/US2004/034851

Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
 - ☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23 1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material:
 - ☐ a sequence listing
 - ☐ table(s) related to the sequence listing
 - b. format of material:
 - ☐ in written format
 - ☐ in computer readable form
 - c. time of filing/furnishing:
 - ☐ contained in the international application as filed.
 - ☐ filed together with the international application in computer readable form.
 - ☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/US2004/034851

Box No. II Priority

1. ☐ The following document has not been furnished:

- ☐ copy of the earlier application whose priority has been claimed (Rule 43*bis*.1 and 66.7(a)).
- ☐ translation of the earlier application whose priority has been claimed (Rule 43*bis*.1 and 66.7(b)).

Consequently it has not been possible to consider the validity of the priority claim. This opinion has nevertheless been established on the assumption that the relevant date is the claimed priority date.

2. ☐ This opinion has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rules 43*bis*.1 and 64.1). Thus for the purposes of this opinion, the international filing date indicated above is considered to be the relevant date.
3. ☒ It has not been possible to consider the validity of the priority claim because a copy of the priority document was not available to the ISA at the time that the search was conducted (Rule 17.1). This opinion has nevertheless been established on the assumption that the relevant date is the claimed priority date.
4. Additional observations, if necessary:

Box No. V Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	
	No: Claims	1,22,34,42,48
Inventive step (IS)	Yes: Claims	
	No: Claims	2-21,23-33,35-41,43-47,49-56
Industrial applicability (IA)	Yes: Claims	1-56
	No: Claims	

2. Citations and explanations

see separate sheet

Reference is made to the following documents:

D1: US-B-6181699

D2: US-B-6236659

A. Remarks made in respect of the present application:

1. The application does not meet the requirements of Article 6 PCT, because claims 5, 6, 11, 14, 22, 26, 28, 29, 31, 37, 42, 44 and 48 to 55 are not clear.
 - 1.1 **Claims 5, 11, 14, 29, 31, 51 and 55** do not meet the requirements of Article 6 PCT in that the matter for which protection is sought is not clearly defined. The claims attempt to define the subject-matter in terms of the result to be achieved, which merely amounts to a statement of the underlying problem, without providing the technical features necessary for achieving this result.
 - 1.2 Although **claims 22, 42 and 48** have been drafted as separate independent claims, they appear to relate effectively to the same subject-matter and to differ from each other only with regard to the definition of the subject-matter for which protection is sought. The aforementioned claims therefore lack conciseness and as such do not meet the requirements of Article 6 PCT.
 - 1.3 Some of the features in the apparatus **claims 26, 28, 49 and 52 to 54** relate to a method of using the apparatus rather than clearly defining the apparatus in terms of its technical features (see for example in claim 28: "... *the packet and appended forwarding information are received*..."). The intended limitations are therefore not clear from these claims, contrary to the requirements of Article 6 PCT.
 - 1.4 The expression "**virtual linecards**" used in **claims 6 and 52**, leaves the reader in doubt as to the meaning of the technical features to which it refers, thereby rendering the definition of the subject-matter of said claims unclear (Article 6 PCT).
 - 1.5 **Claims 37 and 44** do not meet the requirements of Article 6 PCT, in that they refer to

"the virtual linecards" without said linecards have been mentioned before. Furthermore, it should be noted that **claim 50** refers to a "system" and not to a "method".

B. Citations and explanations made in respect of paragraph V:

1. Document **D1** (see in particular abstract; column 8, line 54 to column 9, line 20; Figures 1 and 8) discloses, according to **all** the features of **claim 1**, a method comprising:
 - receiving a packet (see in particular abstract and Figure 1); and
 - conveying the packet between one of a plurality of ports and one of a plurality of uplink interfaces (see in particular column 8, line 54 to column 9, line 20; Figures 1 and 8), wherein
 - the one of the ports and the one of the uplink interfaces are associated (see in particular column 8, line 54 to column 9, line 20; Figures 1 and 8).

The subject-matter of claim 1 is therefore **not new** (see Article 33 (2) PCT).

It should furthermore be noted that **even if** novelty of claim 1 were argued based on a slightly different interpretation of the features of said claim and those disclosed in document **D1**, the subject-matter of claim 1 would **not involve an inventive step**, Article 33 (3) PCT, having regard to the disclosure of document **D1** and the normal knowledge of a person skilled in the art of bridged networks and related data transmission techniques, see e.g. document **D2** (in particular abstract; column 1, lines 39 to 47; column 2, lines 7 to 37; column 3, line 21 to column 4, line 15; column 6, lines 44 to 55; column 8, lines 5 to 11), which describes network connections of switching and routing devices for an efficient use of the network.

2. The same considerations as made in above paragraph 1 regarding claim 1 are also valid for **independent claims 22, 34, 42 and 48** since claims 22, 34, 42 and 48 include essentially the same feature combination as claim 1 in terms of claims relating to a "system" (claims 22, 42 and 48; refer to point 1.2 in above section A),

and a "computer readable medium".

The subject-matter of claims 22, 34, 42 and 48 is therefore **not new** (see Article 33 (2) PCT).

3. **Dependent claims 2 to 21, 23 to 33, 35 to 41, 43 to 47 and 49 to 56** do not contain any additional features which, in combination with the features of any claim to which they refer, involve an inventive step for the reason that the subject-matter of said claims is **either in principle** directly derivable from the disclosure of documents **D1** (see in particular column 8, line 54 to column 9, line 20; column 9, line 39 to column 10, line 7; column 11, line 60 to column 12, line 2; column 12, lines 17 to 25; column 12, lines 51 to 57 and column 13, lines 40 to 45), or **D2** (see in particular column 1, lines 39 to 47; column 2, lines 7 to 37; column 3, line 21 to column 4, line 15; column 6, lines 44 to 55; column 8, lines 5 to 11), or represents simple design details which are generally known to the person skilled in the field of bridged networks and related data transmission techniques.

Dependent claims 2 to 21, 23 to 33, 35 to 41, 43 to 47 and 49 to 56 therefore **do not** meet the requirements of Article 33 (3) PCT.

C. Further remarks made in respect of the present application:

1. To meet the requirements of Rule 5.1 (a) (ii) PCT, the document **D1** which represent a relevant state of the art with regard to the present invention, should be identified in the opening part of the description and the relevant background art disclosed therein should be briefly discussed, making clear what is the inventive contribution of the claimed invention over the prior art.
2. The features of the claims 1 to 56 should be provided with reference signs placed in parentheses (Rule 6.2(b) PCT).
3. To meet the requirements of Rule 6.3 (b) PCT, any independent claim should be

correctly cast in the **two-part form**, with those features which in combination are part of the nearest prior art being placed in the preamble.

4. The opening part of the description should be **brought into conformity** with the wording of any new or amended independent claim(s), Rule 5.1 (a) (iii) PCT.
5. The vague and imprecise statement in the description on page 5, line 15 ("...**spirit**...") implies that the subject-matter for which protection is sought may be different to that defined by the claims, thereby resulting in lack of clarity (Article 6 PCT) when used to interpret them (see also the PCT Guidelines, II-5.30). This statement should therefore be deleted.

PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

PCT

To:

CAMPBELL STEPHENSON ASCOLESE, LLP
Attn. Brock, Brenna A.
4807 Spicewood Springs Road
Bldg. 4, Suite 201
Austin, TX 78759
UNITED STATES OF AMERICA

NOTIFICATION OF TRANSMITTAL OF
THE INTERNATIONAL SEARCH REPORT AND
THE WRITTEN OPINION OF THE INTERNATIONAL
SEARCHING AUTHORITY, OR THE DECLARATION

(PCT Rule 44.1)

Applicant's or agent's file reference CIS0200WO	Date of mailing (day/month/year) 18/03/2005
International application No. PCT/US2004/034851	International filing date (day/month/year) 21/10/2004
Applicant CISCO TECHNOLOGY, INC.	

1. ☒ The applicant is hereby notified that the international search report and the written opinion of the International Searching Authority have been established and are transmitted herewith.

Filing of amendments and statement under Article 19:

The applicant is entitled, if he so wishes, to amend the claims of the International Application (see Rule 46):

When? The time limit for filing such amendments is normally 2 months from the date of transmittal of the International Search Report; however, for more details, see the notes on the accompanying sheet.

Where? Directly to the International Bureau of WIPO, 34 chemin des Colombettes
1211 Geneva 20, Switzerland, Facsimile No.: (41-22) 740.14.35

For more detailed instructions, see the notes on the accompanying sheet.

2. ☐ The applicant is hereby notified that no international search report will be established and that the declaration under Article 17(2)(a) to that effect and the written opinion of the International Searching Authority are transmitted herewith.
3. ☐ With regard to the protest against payment of (an) additional fee(s) under Rule 40.2, the applicant is notified that:

- ☐ the protest together with the decision thereon has been transmitted to the International Bureau together with the applicant's request to forward the texts of both the protest and the decision thereon to the designated Offices.
- ☐ no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made.

4. Reminders


Shortly after the expiration of **18 months** from the priority date, the international application will be published by the International Bureau. If the applicant wishes to avoid or postpone publication, a notice of withdrawal of the international application, or of the priority claim, must reach the International Bureau as provided in Rules 90bis.1 and 90bis.3, respectively, before the completion of the technical preparations for international publication.

The applicant may submit comments on an informal basis on the written opinion of the International Searching Authority to the International Bureau. The International Bureau will send a copy of such comments to all designated Offices unless an international preliminary examination report has been or is to be established. These comments would also be made available to the public but not before the expiration of 30 months from the priority date.

Within **19 months** from the priority date, but only in respect of some designated Offices, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase until **30 months** from the priority date (in some Offices even later); otherwise, the applicant must, within **20 months** from the priority date, perform the prescribed acts for entry into the national phase before those designated Offices.

In respect of other designated Offices, the time limit of **30 months** (or later) will apply even if no demand is filed within 19 months.

See the Annex to Form PCT/IB/301 and, for details about the applicable time limits, Office by Office, see the *PCT Applicant's Guide*, Volume II, National Chapters and the WIPO Internet site.

Name and mailing address of the International Searching Authority  European Patent Office, P.B. 5818 Patentaan 2 NL-2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Authorized officer Alistair Finnie
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NOTES TO FORM PCT/ISA/220

These Notes are intended to give the basic instructions concerning the filing of amendments under article 19. The Notes are based on the requirements of the Patent Cooperation Treaty, the Regulations and the Administrative Instructions under that Treaty. In case of discrepancy between these Notes and those requirements, the latter are applicable. For more detailed information, see also the PCT Applicant's Guide, a publication of WIPO.

In these Notes, "Article", "Rule", and "Section" refer to the provisions of the PCT, the PCT Regulations and the PCT Administrative Instructions respectively.

INSTRUCTIONS CONCERNING AMENDMENTS UNDER ARTICLE 19

The applicant has, after having received the international search report, one opportunity to amend the claims of the international application. It should however be emphasized that, since all parts of the international application (claims, description and drawings) may be amended during the international preliminary examination procedure, there is usually no need to file amendments of the claims under Article 19 except where, e.g. the applicant wants the latter to be published for the purposes of provisional protection or has another reason for amending the claims before international publication. Furthermore, it should be emphasized that provisional protection is available in some States only.

What parts of the international application may be amended?

Under Article 19, only the claims may be amended.

During the international phase, the claims may also be amended (or further amended) under Article 34 before the International Preliminary Examining Authority. The description and drawings may only be amended under Article 34 before the International Examining Authority.

Upon entry into the national phase, all parts of the international application may be amended under Article 28 or, where applicable, Article 41.

When?

Within 2 months from the date of transmittal of the international search report or 16 months from the priority date, whichever time limit expires later. It should be noted, however, that the amendments will be considered as having been received on time if they are received by the International Bureau after the expiration of the applicable time limit but before the completion of the technical preparations for international publication (Rule 46.1).

Where not to file the amendments?

The amendments may only be filed with the International Bureau and not with the receiving Office or the International Searching Authority (Rule 46.2).

Where a demand for international preliminary examination has been/is filed, see below.

How?

Either by cancelling one or more entire claims, by adding one or more new claims or by amending the text of one or more of the claims as filed.

A replacement sheet must be submitted for each sheet of the claims which, on account of an amendment or amendments, differs from the sheet originally filed.

All the claims appearing on a replacement sheet must be numbered in Arabic numerals. Where a claim is cancelled, no renumbering of the other claims is required. In all cases where claims are renumbered, they must be renumbered consecutively (Administrative Instructions, Section 205(b)).

The amendments must be made in the language in which the international application is to be published.

What documents must/may accompany the amendments?

Letter (Section 205(b)):

The amendments must be submitted with a letter.

The letter will not be published with the international application and the amended claims. It should not be confused with the "Statement under Article 19(1)" (see below, under "Statement under Article 19(1)").

The letter must be in English or French, at the choice of the applicant. However, if the language of the international application is English, the letter must be in English; if the language of the international application is French, the letter must be in French.